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Fax**OFFICIAL****To:** Anne R. Kubelik, Examiner**From:** Pat Sweeney**Fax:** (703)308-4242**Pages:** 2**Phone:****Date:** November 13, 2000**Re:** 09/271,584**CC:**

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Attorney Docket No. 4001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Eduardo BLUMWALD et al. | Art Unit: 1638
Serial No.: 09/271,584 |
Filed: March 18, 1999 | Examiner: A. Kubelik
For: GENETIC ENGINEERING
SALT TOLERANCE IN CROP PLANTS |

RESPONSE TO RESTRICTION REQUIREMENT

To The Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

In response to the Restriction requirement mailed October 18, 2000, the Applicant elects, with traverse, Group I to claims 1-14, 17-32, and 53-55, drawn to SEQ ID NO: 1.

The applicant traverses the rejection, in that groups I-V are not distinct from one another. Group I is drawn to a nucleic acid sequences encoding AtNHX1, Group II to nucleic acid sequence encoding AtNHX2, Group III to nucleic acid sequences encoding AtNHX3, Group IV to nucleic acid sequence encoding AtNHX4 and Group V to modified AtNHX. The Examiner asserts the sequences have different functions and encode different proteins and thus are distinct inventions. However, the claims are to different species of the same genus; that is the invention is nucleic acid molecules encoding Na⁺/H⁺ exchangers or a PNHX transporter polypeptide. Where more than one species of an invention is claimed, the claims may be included in one national application where there is a claim generic to all the claimed species. 37 CFR §1.141. Claim 1 is to an isolated nucleic acid molecule encoding a PNHX transporter polypeptide, or a fragment of a polypeptide having Na⁺/H⁺ transporter activity and capable of increasing salt tolerance in a cell. The sequences of Groups I - V all are to variations on AtNHX, and all were isolated from the same plant, *Arabidopsis thaliana*. AtNHX1 and AtNHX2 are homologs that

CERTIFICATE OF MAILING (37 C.F.R. § 1.8(a))

I hereby certify that this Amendment is being sent by facsimile transmission to facsimile number (703)308-4242 to the attention of Anne R. Kubelik,, U.S. Patent & Trademark Office, Washington, D.C. 20231 on the date set forth below. Pursuant to 37 C.F.R. §1.6(d).

November 13, 2000
Date

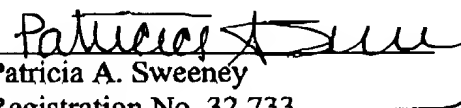
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are physically located at different places in the genome. AtNHX3 and AtNHX4 are homologs of AtNHX1 and AtNHX2. AtNHX3 and AtNHX4 are splice variants of the same gene and are identical in significant portions. The sequences have common uses to protect a plant from adverse affects of a saline environment and to identify homologous nucleic acid molecules from plant species. The polypeptides allow extrusion of monovalent cations from the cytosol, thus transporting or accumulating sodium ions into the vacuoles or extracellular space. In addition, the modified AtNHX of Group V should also be included in this group, as it identifies a species of the genus having common structure and which operates to improve salt tolerance when introduced into plants.

Further, no additional search is required of the examiner in combined groups I-V. All relate to the nucleic acid sequences, plants and plant cells having the same, and the method of making the plant with the sequences. Thus, rather than placing them into different classifications, they may efficiently and accurately be searched as a group, rather than placing some of the sequences into the class of plant transformation, others into the class of plant cells or lines, and still other Groups into the class of plant polypeptides.

Thus, for the foregoing reasons, the applicant requests reconsideration of the restriction requirement and finding Groups I-V should not be subject to restriction from each other.

Respectfully submitted,

By 
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